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| ART UNIT | PAPER NUMBER |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

| Office Action Summary | Application No. 09/251,315 | Applicant(s) Dinwiddie, et al |
|---|---|---|
| | Examiner Reuben M. Brown | Art Unit 2611 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on *Apr 2, 2001* .

2a) ☒ This action is **FINAL.** 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) *1-70* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-70* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

15) ☒ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-70 are rejected under 35 U.S.C. 103(a) as being obvious over Tompkins, (U.S. Pat # 4,710,917), in view of Hansen, (U.S. Pat # 5,255,267).

Considering claims 1 & 13, the amended claimed method and apparatus for simultaneously exchanging unmodulated digital signals between a digital apparatus such as a computer and RF modulated video signals over a single conductor coaxial cable, comprising the step of establishing a plurality of signal frequency channels, including an RF video signal channel and a baseband channel, wherein each frequency channel has a different frequency range, is met by the disclosure of Tompkins, (col. 6, lines 39-61). Tompkins discloses a local distribution system which provides modulated audio/video at 70/170 MHZ for video signals and a baseband frequency range of 0-30 MHZ for computer signals, see Fig. 5 & col. 14, lines 1-25.

Even though Tompkins discloses that the use of a baseband channel, it is not explicitly stated that the baseband channel may be used for the transmission of digital PC signals. Nevertheless, such a utilization of technology was well known in the art at the time the invention was made, and is taught by Hansen, see col. 2, lines 10-15. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Tompkins with known feature of transmitting digital PC signals on the baseband spectrum as taught by Hansen, since PC digital signals do not require a wideband channel, and thus it is more efficient to transmit on a lower band channel. The claimed feature of connecting the I/O ports of the digital signal apparatus to a first terminal of a digital signal filter, wherein the digital signal filter has a frequency passband which is substantially equal to the frequency range of the PC digital signal channel and provides equal filter characteristic impedance to unmodulated digital signal exchanged bi-directionally, read on the operation Tompkins, (col. 5, lines 25-65) and of the special tap device 22 of Hansen. The special tap device 22 includes a filtering means which passes signal in the passband reserved for computer signals, (col. 1, lines 14-17; col. 3, lines 64-68).

Regarding the additional claimed feature of connecting each RF modulated video signal apparatus through an RF video signal frequency filter having a passband which is substantially equal to the frequency range of the RF video signal channel, also reads on the operation of the special tap 22, which includes filter for passing the 50-350 MHZ broadband frequency spectrum, (col. 2, lines 24-30). As fo the further claimed limitations of the digital signal frequency filter and

the RF video signal frequency filter having characteristic impedances which enables the instant filters to interface between the respective digital signal apparatus or video receiving apparatus and a coaxial cable, see col. 3, lines 4-25. Hansen teaches the special tap 22 operates at the proper impedance for transmitting signals either to/from a computer or TV receiver from/to a local coaxial cable.

Considering claims 2, 14, 26 & 39, digital computer signals occupy a lower range of the frequency spectrum than video signals.

Considering claims 3, 15, 27, 36 & 40, Hansen necessarily includes an impedance matching network for connecting the digital apparatus to the coaxial cable, col. 3, lines 5-20. Hansen provides an apparatus 22 which supports bi-directional signaling between a computer and a coaxial cable 12, col. 1, lines 38-45; col. 2, lines 32-35).

Considering claims 4, 16, 28, 41, 51, 68 & 70, Hansen provides means for ensuring the compatibility and interoperability of computers devices with a network by matching the impedance of the digital apparatus with the network, (col. 1, lines 38-40; col. 3, lines 5-25). Official Notice is taken that at the time the invention was made, it was well known in the art to utilize series and shunt resistance to ground for the well known for the purpose of coupling devices to a network. Connecting a resistor to ground at the terminal end of the series resistor,

enables the necessary characteristic resistance value to be input in order to be properly impedance matched to the network, thereby avoiding the known problem of signal reflex.

In fact, Hansen discloses that the output impedance of the interface may be dynamically changed, depending upon the type of operation, see col. 3, lines 12-18. Hansen states that the MAU presents high impedance load when receiving signals and a low impedance load when transmitting signals onto the coaxial cable. Furthermore Hansen discloses that the at the end a network segment the net terminal should be terminated with 50 ohms. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Hansen with the notoriously well known arrangement of series and shunt resistance for the known purpose of dynamically changing the output impedance of the interface, thereby properly impedance matching with a network. The claimed recitation concerning an impedance matching network providing a terminating impedance value which approximates the characteristic impedance provided by the coaxial cable reads on Hansen, col. 2, lines 32-35.

As for claims 5, 17, 29, 42 & 52, at the time the invention was made, it would have been obvious for one of ordinary skill in the art, to arrange the series to shunt resistance to any number of ratios, including the well known one third to two thirds was a well known arrangement.

Considering claims 6-7, 18-19, 30 & 43-44, Hansen discloses a third order filter, (col. 3, lines 24-34).

Considering claims 8, 20, 31, 45, Hansen discloses at least a third order filter. Official Notice is taken that at the time the invention was made, fifth order filter technology was well known in the art. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Hansen with the well known technology of fifth order filters, at least for the desirable benefit of a more precis filtering means.

Considering claims 9, 21, 32, 46, 57, Hansen provides that the digital PC signal are transmitted over the baseband channel of 0-25 MHZ, (col. 1, lines 14-16; col. 3, line 65). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Hansen with the well known frequency arrangement of transmitting baseband signal in the lower frequency spectrum, at least for the desirable benefit of utilizing the 5-30 MHZ for upstream communication, which is the frequency spectrum that upstream communication traditionally occupies.

Considering claims 10, 22, 33 & 47, Hansen is directed to 10 base 2 standard which supports 10 Mbs, (col. 1, lines 10-15; col. 2, lines 15-18).

Considering claims 11, 23, 34, 48 & 53, one of the purposes of the Hansen is to avoid the interference of baseband signals with broadband signals, (col. 1, lines 38-42; col. 2, lines 35-38).

Considering claims 12 & 24, the claimed method steps and apparatus for exchanging unmodulated digital signals between a digital signal apparatus over a single coaxial cable simultaneously with broadband transmission which corresponds with subject matter above in the rejection of claim 1, are likewise rejected. Regarding the additional feature of utilizing a 0-2.5 MHZ channel for PC digital signals, corresponds with subject matter mentioned above in the rejection of claim 9, and is likewise rejected. As for the claimed plurality of components such as impedance matching networks it would have been obvious for one ordinary skill in the art at the time the invention was made to modify Hansen with any number of additional items in order to properly interface with a plurality of computer or video reception devices.

Considering claims 25 & 38, the claimed method steps and apparatus for distributing RF modulated broadcast TV signals from a broadcast signal source to networked appliances connected to the source through a plurality of single conductor coaxial cables, and simultaneously distributing signals exchanged between the networked appliances from RF modulated video signal appliances and unmodulated digital signals from a a digital signal apparatus over a single coaxial cable reads on the disclosure of Hansen, (Fig. 1; col. 1, lines 5-15; col. 2, lines 5-15). The amended claimed feature of a device for bi-directionally transmitting and

receiving RF modulated signals on a plurality of interconnected coaxial cables is broad enough to read on Fig. 2. The claimed multidrop signal distribution apparatus having a source input for receiving the RF modulated broadcast TV signals from the broadcast source and having a plurality of output ports for receiving the RF modulated video signals and unmodulated digital signals is met by the tap 22. Furthermore, Hansen teaches coupling the RF broadcast signals within the signal distribution apparatus from the source input to the signal port. Also Hansen shows that the baseband and broadband signals are coupled to the output ports of tap 22. Moreover, each appliance in Hansen is connected to its associated coaxial cable through an associated one of a plurality of digital signal frequency filters, or a RF modulated video signal frequency filter, (col. 2, lines 24-40).

Considering claim 35, see Hansen col. 15-24.

Considering claim 37, the claimed method steps of distributing RF modulated broadcast TV signals from a broadcast signal source to networked appliances connected to the source through a plurality of single conductor coaxial cables, and simultaneously distributing signals exchanged between the networked appliances from RF modulated video signal appliances and unmodulated digital signals from a digital signal apparatus over a single coaxial cable which corresponds with subject matter above in the rejection of claim 1, are likewise rejected.

Regarding the additional feature of utilizing a 0-2.5 MHZ channel for PC digital signals, corresponds with subject matter mentioned above in the rejection of claim 9, and is likewise rejected. The claimed impedance matching network corresponds with subject matter mentioned above in the rejection of claim 3, and is also likewise rejected.

Considering claim 49, the claimed method steps of distributing RF modulated broadcast TV signals from a broadcast signal source to networked appliances connected to the source through a plurality of single conductor coaxial cables, and simultaneously distributing signals exchanged between the networked appliances from RF modulated video signal appliances and unmodulated digital signals from a digital signal apparatus over a single coaxial cable which corresponds with subject matter above in the rejection of claim 1, are likewise rejected. Hansen does not teach the well known feature of an infrared (IR) command technology for operating the networked appliances. Nevertheless, Official Notice is taken that at the time the invention was made, IR technology was very well known in the art. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Hansen with the well known feature of IR technology control of appliances, at least for the known desirable advantage of providing the operator with a mobile appliance control means.

Considering claims 50, Hansen necessarily includes an impedance matching network for connecting the digital apparatus to the coaxial cable, col. 3, lines 5-20. Hansen provides an

apparatus 22 which supports bi-directional signaling between a computer and a coaxial cable 12, col. 1, lines 38-45; col. 2, lines 32-35).

Considering claim 54, the claimed distribution bus at least reads on bridge 24 of Hansen, (col. 2, lines 41-65).

Considering claims 55-56, Official Notice is taken that at the time the invention was made, it was well known in the art to limit the length of transmission mediums in order to reduce the likelihood of wave interference. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Hansen with the well known feature of limiting the length of a transmission medium to a length derived, in order to avoid wave signal interference.

Considering claims 58-60, Hansen discloses a third order filter, (col. 3, lines 24-34).

Considering claim 61, Hansen discloses a system which includes tap 22, that is enabled to interface a coaxial cable 12, with a plurality of devices, including computers and video reception devices. Hansen teaches that digital computer signals are transmitted over the baseband portion of the frequency spectrum, whereas the video signals may be simultaneously transmitted over the broadband spectrum.

Considering claim 62, Hansen includes circuit elements for coupling the user appliances the tap 22.

Considering claims 63-64, Hansen provides for amplifiers and a high pass filters for providing a low impedance coupling of the RF signals to the signal ports, (col. 3, lines 40-51).

Considering claim 65, see Hansen, col. 3, lines 5-12; lines 35-38.

Considering claim 66, see Hansen, col. 5-15.

Considering claim 67, Hansen discloses a means for transmitting an RF modulated signal over a broadband channel in a coaxial cable between a video display apparatus and the broadcast TV source, see Abstract.

Considering claim 69, Hansen teaches utilizing various portions of the frequency spectrum for transmission of at least video and computer digital signals. Official Notice is taken that at the time the invention was made, it was well known to utilize a portion of the frequency spectrum for control codes. It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Hansen to include an additional portion of the frequency spectrum

for control commands, at least for the desirable advantage of avoiding the need for an additional cable medium in order to transmit the instant control commands, among appliances.

***Response to Arguments***

3. Applicant's arguments filed 4/2/2001 have been fully considered but they are not persuasive. Applicant argues throughout that the present invention provides a system interconnected over a complete network, as opposed to Hansen, as a distinction between the present invention and Hansen. Applicant argues on page 22, that Hansen does not disclose a "complete network" and that in fact the Bridge 24 prevents bi-directional coupling, examiner respectfully disagrees. First of all, Hansen is directed to bi-directional communication system and thus reads on applicants amended claimed feature of transmission over a complete network, see col. 2, lines 41-49, which clearly discloses that the RF line includes a bi-directional amplifier. Moreover, Hansen clearly teaches that taps 22 enable bi-directional communication from/to MAU and PC's 16, see col. 1, lines 38-43; col. 2, lines 15-20 & col. 3, lines 16-23.

Secondly, with respect to the amended claim feature of transmission of data over a "complete network". The instant recitation is broad enough to read on the overall bi-directional nature of Hansen, since the RF headend transmits broadcast signals to user terminals, and user terminals transmit signals back to the RF headend. Furthermore, the instant claims 1, 12, recite, " a method of exchanging unmodulated digital signals between digital signal apparatus interconnected over a complete network", which reads also reads on the one-way connection of the RF headend to the user terminals. The transmission of broadcast data from a source to its intended destination reads on a complete network.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) Yu Interconnection of a plurality of home devices over a coaxial cable network.

B) Face Two-way video.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 872-9314, (for formal communications intended for entry)

**Or:**

(703) 872-9314 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reuben M. Brown whose telephone number is (703) 305-2399. The examiner can normally be reached on Monday thru Friday from 830am to 430pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Faile, can be reached on (703) 305-4380. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

ANDREW FAILE
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